



SEQUENCE LISTING

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TECH CENTER 1600/2900

<110> Meloen, Robert Hans
Oonk, Hendrica Berendina

E2

<120> An Improved Peptide, Immunogenic Composition and Vaccine or Medical Preparation, a Method to Immunise Animals Against the Hormone LHRH, and Analogs of the LHRH Tandem Repeat Peptide and their Use as Vaccine

<130> 2183-4518US

<140> 09/659,983

<141> 2000-09-12

<150> US 09/274,048

<151> 1999-03-22

<150> US 08/981,557

<151> 1995-06-07

<150> PCT/NL96/00223

<151> 1996-06-06

<150> US 08/447,298

<151> 1995-06-07

<150> US 08/476,013

<151> 1995-06-07

<160> 13

<170> PatentIn version 3.1

<210> 1
<211> 10
<212> PRT
<213> Sus scrofa

E2
cont
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<221> MISC_FEATURE
<222> (1)..(1)
<223> X=pyroglutamic acid

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<222> (10)..(10)
<223> X=Gly-NH2

<400> 1
Xaa His Trp Ser Tyr Gly Leu Arg Pro Xaa
1 5 10

<210> 2
<211> 10
<212> PRT
<213> Homo sapiens

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<223> X=pyroglutamic acid

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<222> (10)..(10)
<223> X=Gly-NH2

<400> 2

Xaa His Trp Ser His Gly Trp Tyr Pro Xaa
1 5 10

<210> 3

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> A peptide suitable for eliciting an immune response against forms
GnRH/ LHRH.

<220>

<221> MISC_FEATURE

<222> (1)..(1)

<223> X=pyroglutamic acid or Gln with attached tail of one or more addi
tional amino acids

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<221> MISC_FEATURE

<222> (3)..(3)

<223> X=Trp or N(indole)-formyl-tryptophan

<220>

<221> SITE

<222> (10)..(11)

<223> there is either a direct bond or a spacer group between Gly at po
sition 10 and Gln at position 11

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<222> (13)..(13)

<223> X=Trp or N(indole)-formyl-tryptophan

E2
Cont.

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<222> (20)..(20)

<223> X=Gly-NH2 or Gly with attached tail or one or more amino acids

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<221> REPEAT

<222> (10)..(19)

<223> repeat of amino acid sequence between positions 10-19 where the amino acids in positions 10-19 are present at least once

<400> 3

Xaa His Xaa Ser Tyr Gly Leu Arg Pro Gly Gln His Xaa Ser Tyr Gly
1 5 10 15

Leu Arg Pro Xaa
20

<210> 4

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<223> A peptide suitable for eliciting an immune response against forms GnRH/ LHRH.

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<221> MISC_FEATURE

<222> (1)..(1)

<223> X=pyroglutamic acid

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<222> (6)..(6)

<223> X=D-Lys

E2
Cont.

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<222> (11)..(11)

<223> X=Gln or Gln preceded by a spacer

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cont.
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<222> (16)..(16)

<223> X=D-Lys

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<222> (21)..(21)

<223> X=Cys-NH2

<400> 4

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1 5 10 15

Leu Arg Pro Gly Xaa
20

<210> 5

<211> 21

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GnRH/ LHRH.

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<221> MISC_FEATURE

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<223> X=pyroglutamic acid

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<222> (6) .. (6)

<223> D-Lys

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<223> X=Gln or Gln preceded by a spacer

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<222> (16) .. (16)

<223> X=D-Lys

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<222> (21) .. (21)

<223> X=Cys-NH2

<400> 5

Xaa His Trp Ala Tyr Xaa Leu Arg Pro Gly Xaa His Trp Ala Tyr Xaa
1 5 10 15

Leu Arg Pro Gly Xaa
20

<210> 6

<211> 21

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<223> A peptide suitable for eliciting an immune response against forms

E2
Cont.

GnRH/ LHRH.

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<223> X=pyroglutamic acid

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<221> MISC_FEATURE

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<223> X=D-Lys

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<221> MISC_FEATURE

<222> (11)..(11)

<223> X=Gln or Gln preceded by a spacer

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<221> MISC_FEATURE

<222> (16)..(16)

<223> X=D-Lys

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<221> MISC_FEATURE

<222> (21)..(21)

<223> X=Cys=NH2

<400> 6

Xaa His Trp Ser Tyr Xaa Leu Ala Pro Gly Xaa His Trp Ser Tyr Xaa
1 5 10 15

Leu Ala Pro Gly Xaa
20

<210> 7

E2
Cont.

<211> 21

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<213> Artificial Sequence

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<223> A peptide suitable for eliciting an immune response against forms
GnRH/ LHRH.

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<223> X=Gln or Gln preceded by a spacer

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<222> (16) .. (16)

<223> X=D-Lys

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<222> (21) .. (21)

<223> X=Cys-NH2

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E2
cont.

Xaa His Trp Ser Tyr Xaa Leu Arg Pro Ala Xaa His Trp Ser Tyr Xaa
1 5 10 15

Leu Arg Pro Ala Xaa
20

<210> 8

<211> 42

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GnRH/ LHRH.

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<222> (1) .. (1)

<223> X=NH2-Glu

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<222> (6) .. (6)

<223> X=D-Lys

<220>

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<222> (11) .. (11)

<223> X=Gln or Gln preceded by a spacer

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<222> (16) .. (16)

<223> X=D-Lys

<220>

E2
cont.

<221> MISC_FEATURE

<222> (22) .. (22)

<223> X=NH2-Glu

<220>

<221> MISC_FEATURE

<222> (27) .. (27)

<223> X=D-Lys

<220>

<221> MISC_FEATURE

<222> (32) .. (32)

<223> X=Gln or Gln preceded by a spacer

<220>

<221> MISC_FEATURE

<222> (37) .. (37)

<223> X=D-Lys

<220>

<221> SITE

<222> (21) .. (42)

<223> dimer formed between Cys 21 and Cys 42

<400> 8

Xaa His Trp Ser Tyr Xaa Leu Arg Pro Gly Xaa His Trp Ser Tyr Xaa
1 5 10 15

Leu Arg Pro Gly Cys Xaa His Trp Ser Tyr Xaa Leu Arg Pro Gly Xaa
20 25 30

His Trp Ser Tyr Xaa Leu Arg Pro Gly Cys
35 40

<210> 9

<211> 21

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<223> A peptide suitable for eliciting an immune response against forms
GnRH/ LHRH.

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<222> (1) .. (1)

<223> X=pyroglutamic acid

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<222> (6) .. (6)

<223> X=D-Lys

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<221> MISC_FEATURE

<222> (11) .. (11)

<223> X=Gln or Gln preceded by a spacer

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<222> (16) .. (16)

<223> X=D-Lys

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<221> MISC_FEATURE

<222> (21) .. (21)

<223> X=Cys-NH2

<400> 9

E2
Cont.

Xaa His Trp Ser Tyr Xaa Leu Arg Pro Gly Xaa His Trp Ser Tyr Xaa
1 5 10 15

Leu Arg Pro Gly Xaa
20

<210> 10

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> A peptide suitable for eliciting an immune response against forms
GnRH/ LHRH.

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<221> MISC_FEATURE

<222> (1)..(1)

<223> X=Ala modified with acetyl group

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<222> (6)..(6)

<223> X=D-Lys

<220>

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<222> (16)..(16)

<223> X=D-Lys

<220>

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<222> (21)..(21)

<223> X=Cys-NH2

<400> 10

E2
cont.

Xaa His Trp Ser Tyr Xaa Leu Arg Pro Gly Ala His Trp Ser Tyr Xaa
1 5 10 15

Leu Arg Pro Gly Xaa
20

<210> 11

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<220>

<223> A peptide suitable for eliciting an immune response against forms
GnRH/ LHRH.

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<221> MISC_FEATURE

<222> (1) .. (1)

<223> X=pyroglutamic acid

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<222> (6) .. (6)

<223> X=D-Lys

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<221> MISC_FEATURE

<222> (11) .. (11)

<223> X=Gln or Gln preceded by a space

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<221> MISC_FEATURE

<222> (16) .. (16)

<223> X=D-Lys

<220>

E2
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<222> (21)..(21)

<223> X=Cys-NH2

<400> 11

Xaa His Trp Ser Ala Xaa Leu Arg Pro Gly Xaa His Trp Ser Ala Xaa
1 5 10 15

Leu Arg Pro Gly Xaa
20

<210> 12

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GnRH/ LHRH.

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<222> (1)..(1)

<223> X=pyroglutamic acid

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<222> (6)..(6)

<223> X=D-Lys

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<222> (11)..(11)

<223> X=Gln or Gln preceded by a spacer

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<221> MISC_FEATURE

<222> (16)..(16)

<223> X=D-Lys

<220>

<221> MISC_FEATURE

<222> (21)..(21)

<223> X=Cys-NH2

<400> 12

Xaa His Trp Ser Tyr Xaa Ala Arg Pro Gly Xaa His Trp Ser Tyr Xaa
1 5 10 15

Ala Arg Pro Gly Xaa
20

<210> 13

<211> 21

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GnRH/ LHRH.

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<222> (1)..(1)

<223> X=pyroglutamic acid

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<222> (6)..(6)

<223> X=D-Lys

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<221> MISC_FEATURE

<222> (11)..(11)

<223> X=Gln or Gln preceded by a spacer

<220>

<221> MISC_FEATURE

<222> (16)..(16)

<223> X=D-Lys

<220>

<221> MISC_FEATURE

<222> (21)..(21)

<223> X=Cys-NH2

<400> 13

Xaa His Trp Ser Tyr Xaa Leu Arg Ala Gly Xaa His Trp Ser Tyr Xaa
1 5 10 15

Leu Arg Ala Gly Xaa
20

E2
concl.